Focus Wild Arizona

Key Words

Behavior: the way an animal acts

Estivation: a period of inactivity during the summer

Hibernation: a period of inactivity during the winter

Metabolism: the complete process in which the body converts energy to a usable form

Torpor: a short period of inactivity

Biologists have noticed that as winter arrives, some animals start to act differently. Many of these **behavior** changes occur in order for the animal to survive the colder temperatures and harsher weather winter brings.

One of the most familiar behavior changes is **hibernation**, when an animal becomes inactive for a long period of time, sometimes many months. Typically during hibernation, body temperature lowers and breathing slows. Because food often is hard to find in winter, hibernating animals also lower their **metabolism**, which means they use less energy and, therefore, do not need as much food. Often, the food they ate before hibernating will nourish them throughout the winter. Many mammals hibernate, and so do other types of animals.

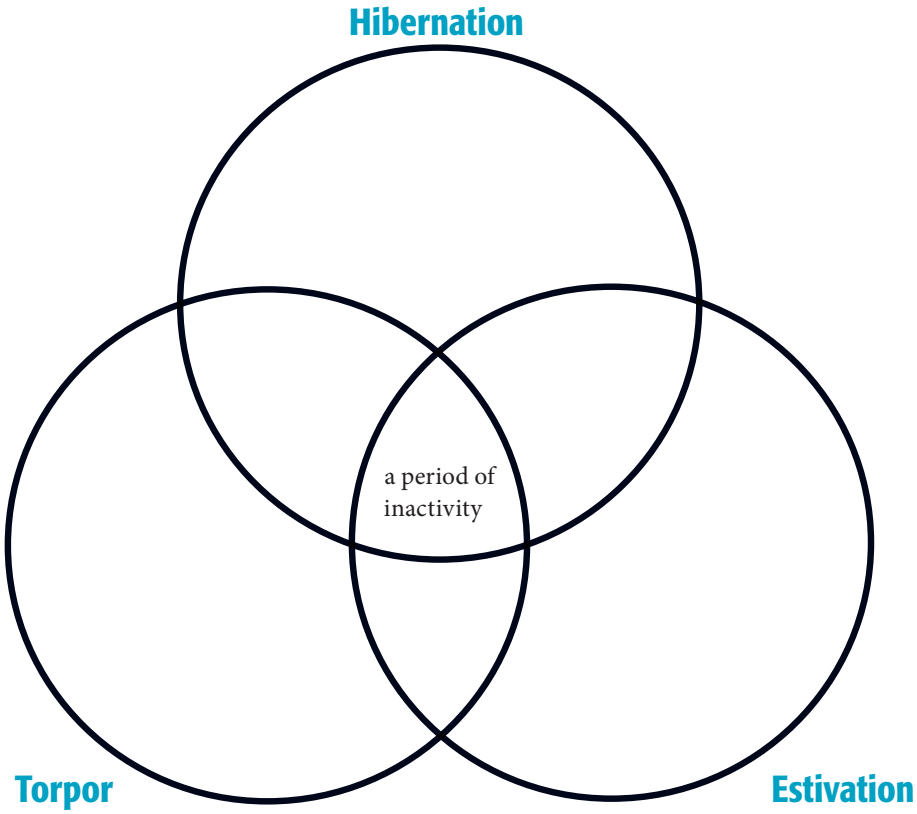
Not all hibernation is the same. There are behaviors that some animals do that are similar to, but different enough from hibernation to be called something else.

Torpor is usually a short period (perhaps a day or so) in which an animal lowers its metabolism and body temperature in order to survive. This often occurs at night, when temperatures become much cooler. Some animals that commonly go through torpor are species of bats and birds.

Estivation does not occur in the winter. Instead, it is used by animals to help them survive hot, dry summers. To estivate, animals typically burrow into the ground (where temperatures are cooler) and lower their metabolism. Many animals in Arizona, including species of reptiles and amphibians, estivate. Can you think of a reason why so many animals in Arizona would estivate?

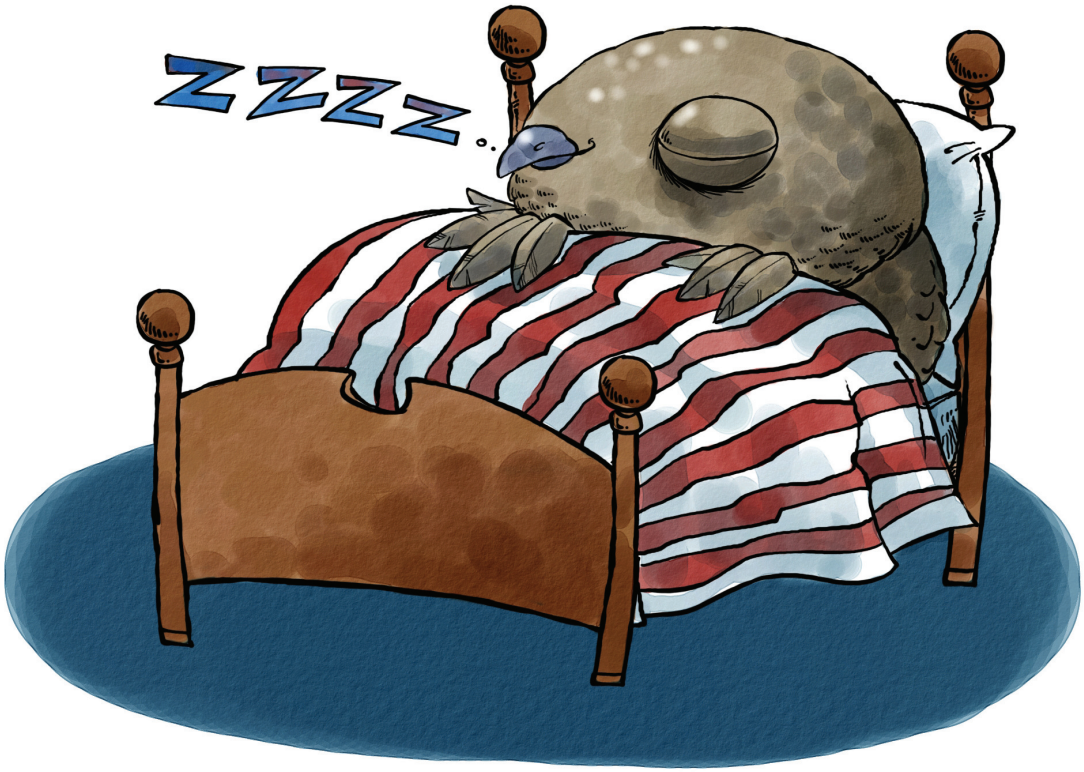
Compare and contrast:

So what is the difference between hibernation, torpor and estivation? Spend a few moments comparing and contrasting. Use the chart below to help you. Each circle represents one of



By Eric Proctor

the behaviors. In the circles, write down characteristics of that behavior. When a circle overlaps with another one, write down characteristics that both of those behaviors have in common in the area where the two circles overlap. In the center where the three circles overlap, write down characteristics that all three behaviors share in common. For example, all three are periods of time when an animal becomes inactive. As a result, this has been placed in the center section, which overlaps all three. Can you add more to the chart?



Do the science:

Called "the sleeping one" by the Hopi Indians, the common poorwill is a unique bird found in Arizona. It belongs to the nightjar family of birds, which are closely related to owls. While many poorwills migrate during the winter, some individuals stay home and try to survive the season. They usually nestle up in a crack or hole in a rock. Because their main food source is insects, which are not easily found at this time of year, these birds lower their metabolism so they will not have to eat. They also lower their body temperature, sometimes dropping it 60 degrees or more! In fact, biologists have observed some of the lowest body temperatures ever found in birds in wintering poorwills.

Scientists also have learned these birds may not remain inactive during the entire winter. Instead, poorwills alternate between inactivity and action, become active every so often as food becomes available or as temperatures rise. Scientists debate whether the common poorwill actually hibernates or whether it simply enters torpor.

Based on the chart, what do you think? Does the common poorwill hibernate or enter torpor? Be sure to explain your answer. If necessary, use the Internet or a book to get more information.

▪ This feature is part of the Arizona Game and Fish Department's Focus Wild Arizona program, a free educational program for teachers, parents, students or anyone interested in learning about wildlife and habitat. Visit our Web site, www.azgfd.gov/focuswild, to find exciting lessons and resources.